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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,398	02/05/2004	Ran Lifshitz	P-3933-US1	3864

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EXAMINER	
PAK, JOHN D	

ART UNIT	PAPER NUMBER
1616	

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/771,398	LIFSHITZ, RAN	
	Examiner	Art Unit	
	JOHN PAK	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/04, 10/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims 1-30 are pending in this application.

Applicant's election with traverse of the invention of **Group I, wherein the metal ion component is copper or zinc**, in the response filed on 9/28/2006 is acknowledged. Applicant argues that the restriction requirement is improper because "there is no undue burden of search for compositions and method for controlling plant diseases caused by pathogenic microorganism comprising copper, zinc, manganese, calcium, iron or aluminum." The Examiner cannot agree. The Examiner has already established the separate classification of the five distinct inventions, which contributes to undue burden. Applicant fails to address the Examiner's evidence of undue burden caused by separate classification and extensive prior art related to the research efforts in the metal-related field of chemistry (see Office action of 9/20/2006, page 3, last paragraph). Further, patents such as U.S. 6,849,276 & 6,471,976 (Cu for plants), 3,869,486 (Mn for plants) and 6,569,808 (Al for plants) are additional evidence of undue burden in that the prior art clearly recognizes divergent subject matter and divergent search fields for the different metals, which under the facts of this case rises to a level of undue burden due to the extensive prior art related to metals and the divergent chelating agents covered by applicant's claims. Moreover, the search required of any one of the invention groups would not be required (even if there were overlap in search hits) for the other invention groups.

For these reasons applicant's arguments regarding the restriction requirement are found unpersuasive and the requirement is hereby made FINAL.

Claims 1-30 will presently be examined to the extent that they read on the elected subject matter of record.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The ratio recited in claims 28-30 are confusing. It cannot be determined whether the ratio is for (a) : [(b) + (c)] or [(a) + (b)] : (c).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 11-15, 17 and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/53760.

At the outset, it is recognized that the composition of WO 99/53760 "precludes application to living plants." However, after reviewing applicant's claim language, it has been determined that applicant's "plant disease" is not necessarily restricted to living

plant disease. Broadly interpreted, a plant disease could encompass disease of harvested plants, such as rotten tomatoes or fungal and bacterial infection of wood. This is how WO 99/53760 is being applied here.

WO 99/53760 discloses in many examples the aqueous combination of 60 parts phosphorous acid and 10 parts of oxine copper[1] (page 30, Examples 1-5) or 30 parts phosphorous acid and 10 parts oxine copper (page 30, Example 6). Dilution for end use solution is disclosed (page 6, lines 27-30). Liquid solvent such as water and glycols is disclosed (page 8, lines 4-6). Treatment of logs and lumber is disclosed (page 1, lines 7-8).

Applicant's claims 1 and 15 recite a proportion feature recited in terms of "when wet." It is not specified how much wetness is required. So apparently, the amount of water that would be required to meet this feature is open. According to this interpretation, the exemplified compositions of the cited reference meet the claim feature. Since the amount of water in the claim feature is not specified and the reference clearly teaches further dilution, the disclosed compositions are encompassed by the "when wet" proportional feature.

Claims 1 and 15 further recite a synergistic control of plant disease that is greater than the additive sum of the control provided by phosphorous acid/salt + control provided by metal-chelating agent. First, it is the Examiner's position that because the

[1] It is noted that "oxine copper" is a copper cation complex with 8-hydroxyquinoline (page 9, line 4).

same copper, same chelating agent (8-hydroxyquinoline), and same phosphorous acid are present in the cited reference's composition, it would necessarily possess the same property as applicant's composition. Second, the cited reference teaches synergism between the biocides (page 29, lines 28-29). Therefore, applicant's claim feature is met by the cited reference.

Applicant's claim 3 requires various additives such as anti-freeze agents. The cited reference discloses adding glycols. Glycols would meet the anti-freeze agent feature.

Applicant's claims 12-14 and 25-27 recite activity against various pathogenic microorganisms. The Examiner's position is that because the cited reference discloses compositions that contain the same exact composition components, the same exact control of the same exact pathogenic microorganisms would be present and obtained.

For these reasons, the claims are anticipated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-18, 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of WO 00/62609 and Thizy et al. (US 4,075,324).

WO 00/62609 discloses agents for control of fungal and bacterial diseases in plants comprising a chelate of zinc and a chelate of another metal ion such as copper (claims 1-11; 6; page 3, lines 2-3, 8-11, 16-23; page 4, line 1). copper sulfate and zinc sulfate are used as the source of copper and zinc ions, respectively (page 5, lines 10 and 16). Citric acid chelates of copper and zinc are known for control of fungal diseases (page 1, lines 12-14). Chelating agents can be "based upon organic acids, organic alcohols ... or other synthetic chelating agents combined with a metal" (page 3, lines 18-19; see also claims 1, 2, 12). Glycine and citric acid are specified as chelating agents (page 4, lines 1-2). Activity against Erwinia species is disclosed (Field Experiment 1 on pages 10-12; Table 4 on page 11; Table 5a on page 12). Use of acidifying agents such as nitric acid and sulfuric acid is disclosed (page 9, lines 16-18). Concentration of use-composition is taught from the examples such as Table 5a, wherein 1.5% concentration of 1.06M to 1.6M solution of chelated metal ions showed microbicidal control. See also Table 4 and 5b.

Thizy et al. teach the plant fungicidal properties of phosphorous acid and its salts. See from column 1, line 26 to column 4, line 45. Phosphorous acid, NaH_2PO_3, Na_2HPO_3, KH_2PO_3 and K_2HPO_3 are disclosed (column 2, lines 10-39). Copper and zinc

phosphites are also disclosed (column 3, item 13 and 17). Activity against Rhizoctonia solani (column 5, Example 1) and Phytophthora cinnamomi (column 7, Example 3) is disclosed. See also column 8, lines 1-31 for other broad spectrum activity disclosure, including activity against Pseudoperonospora and Peronospora species. Use with other fungicides and pesticides is taught (column 8, lines 32-42; column 9, lines 51-57). Doses of 0.01 to 5 g/liter are taught (column 8, lines 55-59). Incorporation of excipients such as fertilizers, penetration agents, stabilizers, colorants and surfactants is disclosed (column 9, lines 1-15).

The difference between the claimed invention and the cited references is that the references do not expressly disclose the combination of (a) one or more metal ions (elected = Cu, Zn) + (b) chelating agent + (c) phosphorous acid/salt/hydrate, as claimed. However, (a) + (b) is a known plant bactericide and fungicide, as evidenced by WO 00/62609; and (c) is a known plant bactericide and fungicide, as evidenced by Thizy et al. Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. In re Kerkhoven, 205 USPQ 1069, 1072 (CCPA 1980); In re Crockett, 126 USPQ 186 (CCPA 1960).

The proportion feature of claims 1 and 15 are noted. While such feature is not expressly disclosed by the cited references, the use concentration of the two fungicides are well within the concentration limits of applicant's claim feature.

The proportion feature of claims 28-30 are noted. While such feature is not expressly disclosed by the cited references, they would nonetheless have been obvious to the ordinary skilled artisan in this field. The ordinary skilled artisan is already provided with the knowledge of effective concentrations of chelated copper/zinc and phosphorous acid/salts. Further, copper and zinc phosphites are known plant bacteria and fungi controlling agents. Therefore, to mix the two types of active agents in a weight ratio of 3:1 to 1:3, including 1:1, would have been obvious from the known concentrations of the individual active agents.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

In this regard, applicant's specification data has been given due consideration. However, for the following reasons, applicant's supposed evidence of nonobviousness is deemed insufficient –

(1) The prior art teaches the use of soluble compounds of copper and zinc, e.g. sulfates, to provide chelates of copper and zinc ions. Applicant uses the insoluble zinc

oxide to make all of the tested chelated metal compositions, the "AG" composition (page 11, last paragraph) and "AG3" composition (page 18, second paragraph). Therefore, it is the Examiner's determination that applicant's data shows no comparison to the closest prior art. The insoluble zinc oxide would have been expected to provide very little zinc to chelate with the chelating agent. Therefore, its efficacy cannot be compared to the expected efficacy of prior art compositions (using soluble metal compounds to deliver the metal ions to chelate with the chelating agents) that are suggestive of the claimed invention. Increased efficacy when combined with phosphorous acid since the change in pH with the acid would be expected to provide additional solubility to the insoluble zinc oxide.

(2) To summarize the points made above, applicant's data fails to overcome the obviousness of combining zinc sulfate and/or copper sulfate with a chelating agent such as citric acid, citrate or glycine, and further combining with phosphorous acid/salt.

(3) Even if applicant's data could somehow be considered probative for the tested mixture (assuming arguendo), said data is nowhere commensurate in scope with that of the claimed mixture of components. Applicant's chelating agent is open to virtually any type of chelating agent (see claims 1, 15). Data for citric acid is hardly probative for other types of structurally divergent chelating agents such as EDTA, DTPA, saccharate, glucoheptonate, glycine. Asserted evidence of nonobviousness must be commensurate in scope with that of the claimed subject matter. Evidence of

nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356, 358 (CCPA 1972).

For these reasons, the claims must be rejected under 35 USC 103(a).

Claims 1, 3-6, 9-15, 17-19, 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Taylor (US 6,139,879) and Thizy et al.

Taylor discloses control of fungal and/or bacterial diseases of plants with a heavy metal chelate in an aqueous solution, wherein the heavy metal chelate includes Cu-EDDHA and Zn-EDDHA (claims 1-2). pEDDHA and EDDHMA are also disclosed as suitable chelating agents (claim 1; column 3, lines 1-7). 1-5 wt% concentration in water is disclosed (column 4, lines 14-16). Advantage of low or no phytotoxicity is disclosed (claim 1). Control of Erwinia and Xanthomonas is exemplified (Examples 6 and 9).

Teachings of Thizy et al. have been set forth above and the discussion there is incorporated herein by reference.

The difference between the claimed invention and the cited references is that the references do not expressly disclose the combination of (a) one or more metal ions (elected = Cu, Zn) + (b) chelating agent + (c) phosphorous acid/salt/hydrate, as claimed. However, (a) + (b) is a known plant bactericide and fungicide, as evidenced by Taylor; and (c) is a known plant bactericide and fungicide, as evidenced by Thizy et al.

Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. In re Kerkhoven, 205 USPQ 1069, 1072 (CCPA 1980); In re Crockett, 126 USPQ 186 (CCPA 1960).

The proportion feature of claims 1 and 15 are noted. While such feature is not expressly disclosed by the cited references, the use concentration of the two fungicides are well within the concentration limits of applicant's claim feature.

The proportion feature of claims 28-30 are noted. While such feature is not expressly disclosed by the cited references, they would nonetheless have been obvious to the ordinary skilled artisan in this field. The ordinary skilled artisan is already provided with the knowledge of effective concentrations of chelated copper/zinc and phosphorous acid/salts. Further, copper and zinc phosphites are known plant bacteria and fungi controlling agents. Therefore, to mix the two types of active agents in a weight ratio of 3:1 to 1:3, including 1:1, would have been obvious from the known concentrations of the individual active agents.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

In this regard, applicant's specification data has been given due consideration. However, for the following reasons, applicant's supposed evidence of nonobviousness is deemed insufficient –

(1) The prior art teaches the use of chelates of heavy metal such as Cu-EDDHA and Zn-EDDHA. Applicant tested Cu-citrate and Zn-citrate. Applicant's test data is thus not relevant to the obviousness of using structurally divergent chelates such as Cu-EDDHA and Zn-EDDHA.

(2) Even if applicant's data could somehow be considered probative for the tested mixture (assuming arguendo), said data is nowhere commensurate in scope with that of the claimed mixture of components. Applicant's chelating agent is open to virtually any type of chelating agent (see claims 1, 15). Data for citric acid is hardly probative for other types of structurally divergent chelating agents such as EDTA, DTPA, saccharate, glucoheptonate, glycine. Asserted evidence of nonobviousness must be commensurate in scope with that of the claimed subject matter. Evidence of nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356, 358 (CCPA 1972).

For these reasons, the claims must be rejected under 35 USC 103(a).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 7, 9-18, 20, 22-30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,689,392. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

It is noted that U.S. Patent No. 6,689,392 issued from the parent application to the instant application. The patented claims are directed to substantially similar subject matter wherein metal ions are zinc and copper and the chelating agents are citric acid and/or citrates. The elected invention here is directed to zinc/copper and the rejected

claims read on or recite citric acid or citrate as the chelating agent. The phosphorous acid/salt/hydrate component is the same in both the patented claims and the instant claims. See patented claims 1-26.

Therefore, the instant claims clearly read on the subject matter of the patented claims; and the ordinary skilled artisan would have recognized the instant claims as an obvious variation of the patented claims in U.S. Patent No. 6,689,392.

Applicant is advised that several IDS citations were crossed on Form PTO-1449 because they were duplicative listings.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620.** The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Johann Richter, can be reached on **(571)272-0646**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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